

# MINER Act Compliant Communication & Tracking Systems and Peripherals

as of November 24, 2009

## Communication System Peripherals

Manufacturer	Model Number	Product Type	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
Mine Site Technologies	Model PED1	Cap Lamp	6D-46-0	N/A <sup>2</sup>
Kenwood USA Corporation	TK-290, TK-390	VHF or UHF Portable Radio	23-A060002-0	Not specified <sup>3</sup>
NL Technologies	Model GII	Cap Lamp Messenger Circuit	23-ISA070004-0	Not specified <sup>3</sup>
Venture Design Services, Inc.	Model TMLT Text Messaging Location Transponder	Tracking Tag and Text Messaging Device	23-A080002-0	0 feet <sup>4</sup>
Motorola	HT750	VHF or UHF Portable Radio	23-A080007-0	18 feet (Models AAH25RDC9AA3_N & AAH25SDC9AA3_N) and 27 feet (Model AAH25KDC9AA3_N)
SubterraCom Wireless Solutions, LLC	Model 810T	Wireless Tracking and Communication Device	23-A080014-0	Not specified <sup>3</sup>
Hughes Supply Company	HSC RDR_02	Radio Repeater	23-A080019-0	Not specified <sup>3</sup>
L-3 Communications	ASM100001 Accolade	Mesh Radio Handset	23-A080020-0	5 feet <sup>5</sup>
Mine Site Technologies	ICCL	Integrated Communications Cap Lamp with optional tracker board	23-ISA080001-0	Not specified <sup>3</sup>
Mine Site Technologies	ICCL	Integrated Communications Cap Lamp with Optional PED	23-ISA080002-0	N/A <sup>2</sup>
Active Control Technology, Inc.	Model 8035	Telephone	23-A090008-0	8 feet <sup>5</sup>
Matrix Design Group	P/N 2WC-T	Two-way Text Communicator	23-A090007-0	5 feet
American Mine Research	6210	Two-way Text Messenger	23-A090014-0	0 feet <sup>4</sup>

## Leaky Feeder Communication Systems

Manufacturer	Model Number	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
EL-EQUIP, INC	Model VHF-1 Radio System	9B-196-0	Not specified <sup>3</sup>
DAC	Type RFM 2000 Radio System	9B-201-0, -1	Not specified <sup>3</sup>
Mine Radio Systems	Flexcom Communications Systems	9B-219-0	Not specified <sup>3</sup>
Varis Mine Tech.	Model IS Leaky Feeder Communication System	23-A050001-0	Not specified <sup>3</sup>
Tunnel Radio of America	Model UltraComm Distributed Antenna Communication System	23-A070005-0	20 feet <sup>5</sup>
Becker Electronics (PTY) LTD	Becker Leaky Feeder System	23-A080003-0	0 feet <sup>4</sup>
Minecom a division of TR Corporation Pty. Ltd.	MCA 2000 UHF Leaky Feeder System	23-A090001-0	8 feet
Minecom a division of TR Corporation Pty. Ltd.	MCA 1000 VHF Leaky Feeder System	23-A090003-0	8 feet

## Tracking Systems and Devices

Manufacturer	Model Number	Product Type	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
Mine Site Technologies	Model TAG IV Transmitter	Tracking Tag	2G-4162-0	Not specified <sup>3</sup>
Marco	Model PRIM Model PTT-1	Tracking Tag	23-A060001-0	Not specified <sup>3</sup>
Matrix Design Group, LLC	Model MatrixTracker T1000 RFID Tag	Tracking Tag	23-A060003-0	Not specified <sup>3</sup>
NL Technologies	Model Standalone WiFi RFID Tag	Tracking Tag	23-A070001-0	Not specified <sup>3</sup>
Venture Design Services	MLT Mobile Location Transponder Tag	Tracking Tag	23-A070003-0	Not specified <sup>3</sup>
Wholesale Mine Supply	Model i-Q8X rfid Tag	Tracking Tag	23-A070004-0	Not specified <sup>3</sup>
Mine Radio Systems	Model TP2/ISPT	Tracking Tag	23-A070006-0	Not specified <sup>3</sup>
American Mine Research, Inc.	Model Mine Net Tag	Tracking Tag	23-A070007-0	Not specified <sup>3</sup>

<b>Manufacturer</b>	<b>Model Number</b>	<b>Product Type</b>	<b>Approval No.</b>	<b>RFI Minimum Separation Distance<sup>1</sup></b>
NL Technologies	Cap Lamp with RFID Tag	Tracking Tag	23-ISA070001-0	Not specified <sup>3</sup>
Koehler-Bright Star	Model TAG5 Tracker Tag Module	Tracking Tag	23-ISA070002-0	Not specified <sup>3</sup>
Koehler-Bright Star	Model MultiTAG TP1 Transmitter TAG PCB Assembly	Tracking Tag	23-ISA070003-0	Not specified <sup>3</sup>
Pyott-Boone	Model 1980 Tracking Tag	Tracking Tag	23-A080004-0	15 feet <sup>5</sup>
Tunnel Radio of America	Model MineAx T1 RFID Tracking Tag	Tracking Tag	23-A080005-0	0.5 feet <sup>5</sup>
Extronics Ltd.	Model iTAG100/BWH3000 Tag	Tracking Tag	23-A080006-0	8 feet <sup>5</sup>
Conspex Controls	911152 Personnel Tracking Transmitter	Tracking Tag	23-A080011-0	Not specified <sup>3</sup>
Mine Site Technologies	T3i-SC RFID	Tracking Tag	23-A080012-0	0 feet <sup>4</sup>
Matrix Design Group, LLC	MDG METS 2.1 Miner Tracking System	RFID Tracking System	23-A080013-0	Not specified <sup>3</sup>
Active Control Technology, Inc.	ActiveMine Ekahau T301	Tracking Tag	23-A080017-0	Not specified <sup>3</sup>
Wavetrend Technologies, Inc.	Wavetrend Technologies, Inc.	Tracking Tag	23-A080018-0	Not specified <sup>3</sup>
Becker Electronics	BEC004	Vehicle Mounted Tag	23-A090004-0	0 feet <sup>4</sup>
Becker Electronics	BEC003	Helmet Mounted Tag	23-A090006-0	0 feet <sup>4</sup>
L-3 Communications	Model TTURT-01 Tru-Tracker UWB	Tracking Tag	23-A090009-0	0 feet <sup>4</sup>
Pyott Boone Electronics	Tracker Boss	Tracking System	23-A090011-0	5 feet
Becker Electronics	BEC002	Cap Lamp Tag	23-ISA090001-0	0 feet <sup>4</sup>
Koehler-Bright Star	Model TAG 3100	Tracking Tag	23-ISA090003-0	15 feet
L-3 Communications	Model TTTR-01 Tru-Tracker Tag Reader	Reverse RFID tracking with UWB over a LF backbone	23-A090017-0	46 inches

### Fixed Node-Based Communications and/or Tracking Systems

Manufacturer	Model Number	Product Type	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
Matrix Design Group, LLC	MDG METS 2.1	RFID Miner Tracking and Text Messaging System	23-A080013-0	Not Specified <sup>3</sup>
American Mine Research, Inc.	MN-6000 Mine Net System	RFID Miner Tracking and Text Messaging System	23-A090013-0	12 feet

### Wireless Node-Based Communications and/or Tracking Systems

Manufacturer	Model Number	Product Type	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
Venture Design Services, Inc.	MineTracer Miner Location Monitoring System	IEEE 802.15.4 Text Messaging and Tracking System	23-A080001-0	Not specified <sup>3</sup>
L-3 Communications	ACCOLADE	Wireless Mesh Communication and Tracking System	23-A080015-0	7 feet (900 MHz antennas) or 18.5 feet (450MHz antennas)
Innovative Wireless Technologies	Fixed Mesh Node, with Antenna & Battery	Fixed Mesh Node	23-ISA080005-0	18.5 feet <sup>5</sup> (400MHz antenna), 2.5 feet <sup>3</sup> (900MHz pulse antenna), and 7.5 <sup>3</sup> feet (original 900MHz antenna)
Active Control Technology, Inc.	ActiveMine AM1000	Wireless Mesh Communication System	23-A090002-0	18 feet
Rajant Corporation	WE-IS	Breadcrumb® Portable Wireless Mesh Network Node	23-A090012-0	3.3 feet

### Fixed Node-Based Communications and/or Tracking Systems

Manufacturer	Model Number	Product Type	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
NL Technologies	Digital Communications System	IEEE 802.11 mesh network over fiber System	23-A080010-0	1.1 feet <sup>5</sup>

### Medium Frequency Communication Systems

Manufacturer	Model Number	Approval No.	RFI Minimum Separation Distance <sup>1</sup>
Kutta Technologies, Inc.	Drum 100R	23-A090010-0	32 feet

Note 1 – The minimum safe distance is for only one device. The combined effect of multiple RF devices must be taken into account by mine operators and documented in the Emergency Response Plan (ref. MSHA Program Policy Letter PO9-V-13).

Note 2 - This device only receives RF signals, and therefore minimum safe distances around it are not applicable. The surface antenna loop and its hazards associated with blasting circuits were not evaluated.

Note 3 - A minimum separation distance was not specified by the applicant during the MSHA approval process for this device. An approval holder should submit a Revised Approval and Modification Program (RAMP) application to modify the approval to add a minimum separation distance.

Note 4 - Any device with a minimum separation distance of 0 feet is not required to be labeled as such on the MSHA approval plate.

Note 5 - These devices have a minimum separation distance that was verified by MSHA, however, this distance may not be included on the MSHA approval plate. An approval holder may submit a RAMP application to modify the approval to add the minimum separation distance.